

What is claimed is:

1. A process for producing a stabilized tampon from a pledget, comprising the steps of:
  - a. providing a pledget disposed in a pledget infeed carrier;
  - b. unloading said pledget from said pledget infeed carrier and loading said pledget into a split compression mold by a transfer member, said split compression mold being in an open position;
  - c. compressing said pledget in said split compression mold by closing said split compression mold into a closed position to form a compressed tampon;
  - d. unloading said compressed tampon from said split compression mold and loading said compressed tampon into a split stabilization mold by said transfer member, said split stabilization mold being in a closed position;
  - e. applying a gas to said compressed tampon in said split stabilization mold to form a stabilized tampon;
  - f. opening said split stabilization mold into an open position; and
  - g. loading said stabilized tampon into a tampon discharge carrier.
2. The process according to Claim 1, wherein the gas is selected from the group consisting of air, oxygen, nitrogen, argon, carbon dioxide, steam, ether, freon, inert gases and mixtures thereof.
3. The process according to Claim 1 wherein the gas is forced intermittently to stabilize said compressed tampon pledget.
4. The process according to Claim 1 further comprising the step of heating said gas.
5. The process according to Claim 1 further comprising the step of humidifying said gas.
6. The process of Claim 1 wherein said transfer member comprises at least one needle extending in a longitudinal direction for penetrating said compressed tampon.
7. The process of Claim 1 wherein the step of applying a gas to said compressed tampon in said split stabilization mold to form a stabilized tampon includes a step of holding said compressed tampon in said stabilization mold for a time period ranging from about 2 s to about 10 s.

8. The process of Claim 1 wherein the step of applying a gas to said compressed tampon in said split stabilization mold to form a stabilized tampon includes a step of holding said compressed tampon in said stabilization mold for a time period ranging from about 2 s to about 6 s.
9. The process of Claim 1 wherein the step of applying a gas to said compressed tampon in said split stabilization mold ranges from about 0.5 s to about 5 s.
10. The process of Claim 1 wherein said split stabilization mold is heated to a temperature ranging from about 50 deg. C to about 150 deg. C.
11. The process according to Claim 1 wherein the step of unloading said pledget from said pledget infeed carrier and loading said pledget into a split compression mold further includes the step of diverting a secondary absorbent member of said pledget radially from said pledget.
12. A rotary apparatus for mass-producing stabilized tampons from pledgets, said apparatus comprising:
  - a. a rotor being capable of rotating by a shaft, said rotor comprising a multiplicity of tooling stations being capable of producing said stabilized tampons from pledgets, said tooling stations being capable of moving in a radial direction, wherein each said tooling station comprises:
    - i) a split compression mold for compressing a pledget into a compressed tampon and a split stabilization mold for stabilizing said compressed tampon into a stabilized tampon, said molds being aligned with each other in said longitudinal direction, each of said molds having a moving member and a fixed member, said moving member being capable of moving in said radial direction; and
    - ii) a transfer member for moving said pledget in said longitudinal direction, said transfer member being aligned with said molds in said longitudinal direction;
  - b. a pledget infeed carrier disposed adjacent said compression mold for providing a multiplicity of said pledges to said molds, said pledget infeed carrier having a

- multiplicity of cavities, wherein each of said cavities is capable of providing said pledget; and
- c. a tampon discharge carrier disposed adjacent said stabilization mold for discharging said stabilized tampons, said tampon discharge carrier having a multiplicity of cavities, wherein each of said cavities is capable of accepting said stabilized tampon.
13. The apparatus according to Claim 12 wherein said transfer member comprises at least one needle extending in said longitudinal direction for penetrating said compressed tampon for transferring said tampon from said stabilization mold.
14. The apparatus according to Claim 12 wherein said transfer member comprises two needles extending in said longitudinal direction for preventing said stabilized tampon from turning.
15. The apparatus according to Claim 12 wherein said split stabilization mold comprises a heating element for providing a mold temperature ranging from about 50 deg. C to about 150 deg. C.
16. The apparatus according to Claim 12 wherein said split stabilization mold comprises a heating element for providing a mold temperature ranging from about 100 deg. C to about 130 deg. C.
17. The apparatus according to Claim 12 wherein said gas is selected from the group consisting of air, oxygen, nitrogen, argon, carbon dioxide, steam, ether, freon, inert gases and mixtures thereof.
18. The apparatus according to Claim 12 wherein said cavity of said tampon discharge carrier is defined by a multiplicity of longitudinal flutes.
19. The apparatus according to Claim 12 wherein said cavity of said tampon discharge carrier is further defined by at least one spring-loaded plug penetrating into said cavity for retaining said stabilized tampon inside said cavity.

20. A method for unloading a stabilized tampon from a split stabilization mold, comprising the steps of:
- (a) providing said split stabilization mold containing a stabilized tampon, said stabilization mold being in an closed position;
  - (b) providing a transfer member capable of moving in a longitudinal direction, said transfer member comprising at least one needle extending from said transfer member in said longitudinal direction, said at least one needle penetrating said stabilized tampon;
  - (c) opening said stabilization mold from said closed position into an open position, said stabilized tampon being held by said at least one needle penetrating said stabilized tampon disposed inside said stabilization mold; and
  - (d) transferring said stabilized tampon from said stabilization mold by said transfer member moving in said longitudinal direction.